The U.K.'s Defense Logistics Transformation Program: Learning the Lessons from Iraq

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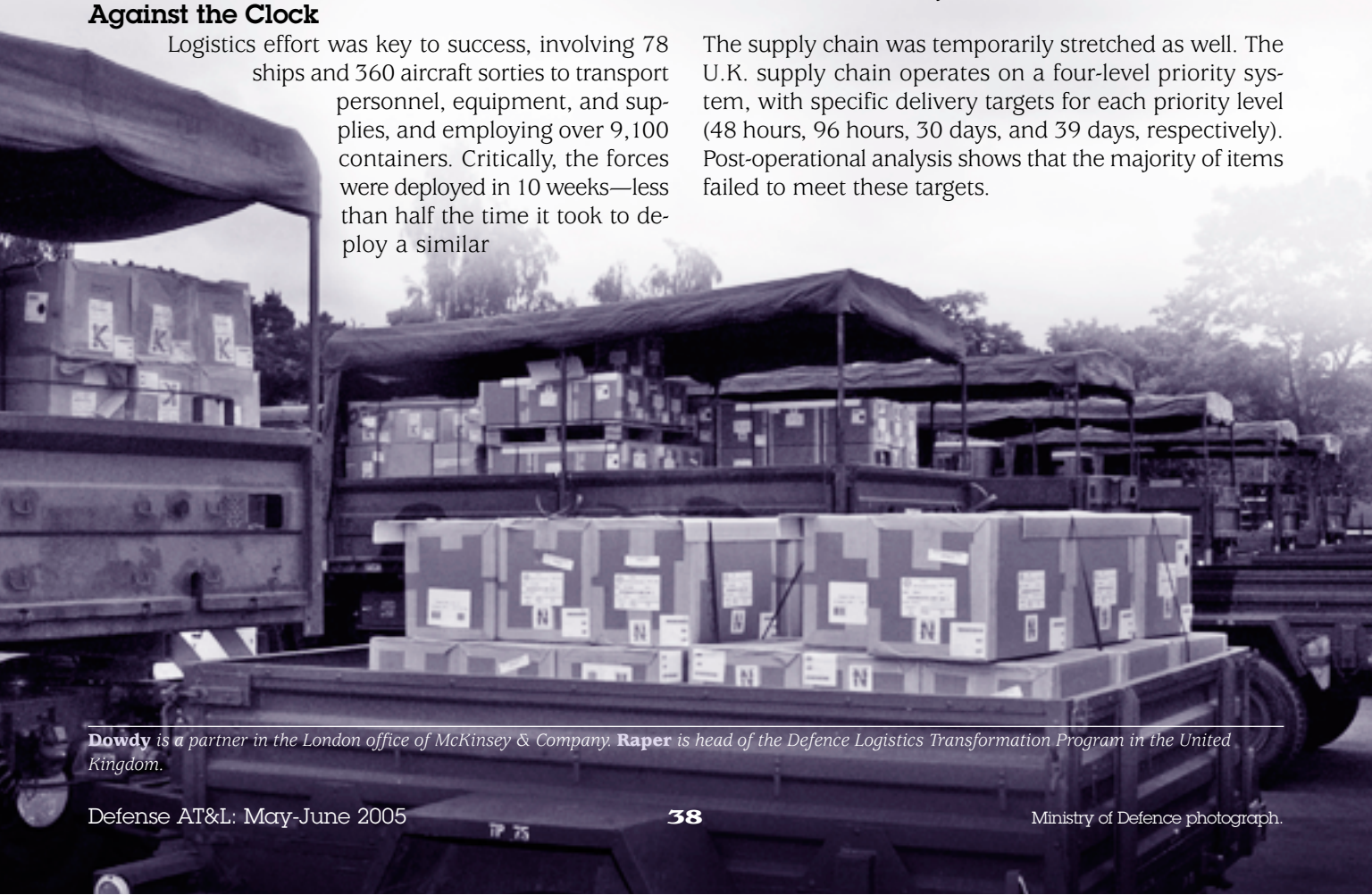
Of the 467,000 coalition troops deployed to the Gulf region as part of Operation Iraqi Freedom in the early months of 2003, fully 46,000 were British, under the United Kingdom's Operation Telic. For the United Kingdom, Operation Telic was the largest military operation since the 1990–91 Gulf War, featuring the deployment of significant military capabilities: 19 warships, 14 Royal Fleet Auxiliary vessels, 15,000 vehicles, 115 fixed-wing aircraft, and nearly 100 helicopters. Although U.S. forces outnumbered British forces on the ground by more than five to one, the United Kingdom actually contributed a greater proportion of its active military personnel than the United States. British forces made a significant contribution to coalition efforts, leading the amphibious assault on the Al Faw peninsula, taking the city of Basra, and conducting over 2,500 air sorties.

Against the Clock

Logistics effort was key to success, involving 78 ships and 360 aircraft sorties to transport personnel, equipment, and supplies, and employing over 9,100 containers. Critically, the forces were deployed in 10 weeks—less than half the time it took to deploy a similar number of personnel and quantity of materiel for the Gulf War, and much more quickly than the governmental planning assumptions envisaged.

As a result of the short lead time, there were inevitably some gaps in existing operational stocks. As one might expect, there were substantial efforts made to plug these gaps and to upgrade existing capabilities before operations began. Sixty-nine tons of combat identification equipment were fitted to vehicles, 6,500 vehicles were repainted, and 194 urgent equipment upgrades completed and fielded—all in a very short period of time. In instances where lead times were too short to purchase required vehicle spares, parts were cannibalized from vehicles in units that were not deployed. Some items made it into theater, but difficulties locating them prevented their being delivered to where they were needed.

The supply chain was temporarily stretched as well. The U.K. supply chain operates on a four-level priority system, with specific delivery targets for each priority level (48 hours, 96 hours, 30 days, and 39 days, respectively). Post-operational analysis shows that the majority of items failed to meet these targets.



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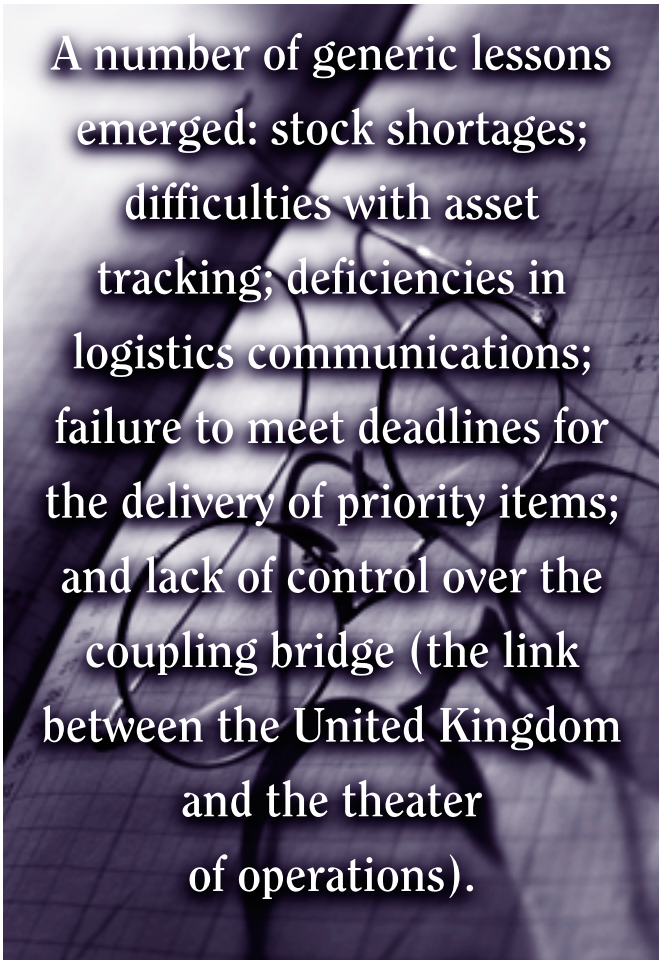
Ministry of Defence photograph.



This failure to deliver on schedule, combined with a lack of in-transit visibility, resulted in some loss of confidence in the deployed supply chain. Frustrated operators in the field re-ordered items and inflated priorities in an effort to get what they needed, further stressing the system.

U.K. equipment did, however, perform well in the Gulf, even with the inherent difficulties presented by desert operations. Equipment availability was generally high: 90 percent for the Challenger 2 main battle tank and 95 percent for the AS90 self-propelled gun, for example. Average helicopter availability was 66 percent, a marked improvement over the levels achieved in recent desert exercises. The quick deployment to the Gulf region, high equipment availability in theater, and operational successes all demonstrate that U.K. armed forces have made major strides in shifting from a static force to one that can rapidly and effectively deploy on expeditionary operations.

What We Learned

Beyond the specific shortfalls and shortages of individual items outlined above, there were a number of more generic lessons that emerged from Operation Telic, including five specific logistics shortcomings: stock shortages; difficulties with asset tracking; deficiencies in logistics communications; failure to meet deadlines for the delivery of priority items; and lack of control over the coupling bridge (the link between the United Kingdom and the theater of operations). Many of these lessons are not new, however. The same issues were noted in operations in Bosnia, Kosovo, and Macedonia, and on exercises in Oman. In some cases, they dated back to the early or mid-1990s. The need for an effective asset tracking capability, for example, was identified on five of the six occasions shown in the figure on the next page and has been in evidence since the Gulf War, if not earlier.

Applying a Transformational Philosophy to Logistics

To address the shortcomings, the U.K. Ministry of Defence launched a defense logistics transformation program early last year, designed to increase the effectiveness of logistics across the department, improving efficiency along the way. Air Chief Marshal Malcolm Pledger, chief of defence logistics, developed seven key principles to guide the transformation effort:

Configure for the most likely operational scenario

Logistics support has traditionally been structured and trained for large-scale, high-intensity operations then scaled down for medium-scale or lower-intensity operations. The aim now is to configure for the most likely operational scenario but have the flexibility and scalability to deliver against the most demanding. This will involve rebalancing human resources and equipment between unit and formation logistics supply units.

Minimize the deployed footprint

One of the main objectives in creating a more agile force is minimization of the deployed footprint, drawing resources back to the point where they can be used most efficiently and flexibly, based on demand pull. This will involve such changes as shifting off-platform repair activity out of the operational theater for all but the most demanding operations and reducing demand for those resources by reducing the need for logistics support, in particular by improving the performance and reliability of equipment.

Shift from a system based on four lines of maintenance to a simplified construct

The Cold War left a legacy of numerous fixed operating bases in the United Kingdom and remote third and fourth lines, associating traditional support with four depths and four lines of maintenance. These are no longer cost-effective given the reduction in threat to the U.K. base and the move to a more expeditionary posture. The traditional four lines of logistics support will be re-formed into a simplified, two-level construct: forward and depth. Forward logistics support contains only deployable support elements. It has a greater need for resilience and will typically be carried out by military personnel but will in-

Identification of Logistics Shortcomings

Operation/ Exercise	Poor asset tracking	Poor logistics communication	Stock shortages	Priority deadlines not met	Lack of control over coupling bridge
Operation RESOLUTE Bosnia-Herzegovina 1995-96	▲	▲	▲		
Operation LODESTAR Bosnia-Herzegovina 1996-98	▲	▲			
Operation AGRICOLA Kosovo 1999		▲	▲	▲	
Operation BESEMER Macedonia 2001				▲	▲
Exercise Saif Sareea II Oman 2001	▲	▲	▲	▲	▲
Operation TELIC Iraq 2003	▲	▲	▲	▲	▲

Source: U.K. Ministry of Defence

creasingly employ Ministry of Defence civilian and contractor personnel. Depth support contains all other deployable and all non-deployable elements. It contains the minimum number of Service personnel (including reservists) required to meet military headcount requirements.

Concentrate resources and materiel

The streamlining of depth support will allow concentration of facilities for a given platform on a single location, eliminating the duplication and waste of multiple facilities with identical capabilities. In the air environment, depth support will be concentrated on appropriate hubs that will carry out on-aircraft repair and overhaul (and some upgrade) and depth B off-aircraft support (similar to today). The aim is to have single facilities per platform and minimum duplication of activity and infrastructure.

In the land-deployable component, the key required change is to withdraw most stock held in barracks, centralizing stock holdings and supporting major training exercises and operations with priming equipment packs (PEPs) that contain sufficient materiel to sustain the force until the supply chain is established.

Optimize asset availability

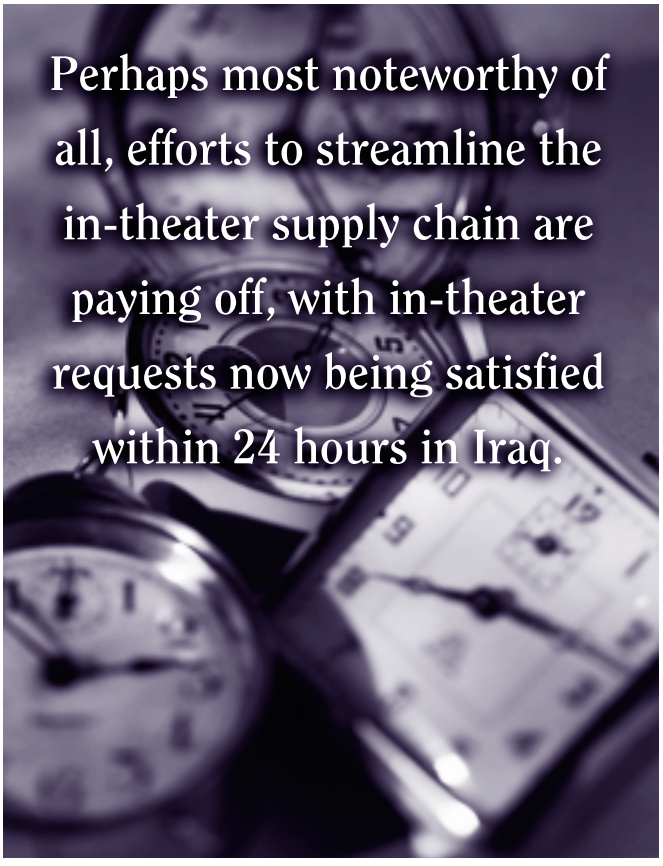
Across all environments, platform-level serviceability is driven by spare parts availability. All too often, the lack of the right spare at the right place at the right time leaves platforms unserviceable—aircraft and vehicles unfit to perform their required tasks and, in many cases, immobilized. Although parts holdings are below planned levels for some capital spares, stock levels overall are generally more than adequate, which raises three possibilities: parts are either in transit; they are serviceable, but in the wrong place; or they are unserviceable. The reality is that many of them are stuck in the repair loop for as long as 180 days. Shortening the repair loop, thereby improving parts availability, is, therefore, a key improvement lever.

Rely on an effective supply chain

Supply chain effectiveness drives the whole of the logistics system and the underlying culture and behavior. Necessary improvements include the creation of a joint expeditionary supply chain organization, simplification of the physical supply chain, and improved transparency.

Have access to timely, relevant, and accurate information

Access to better information, primarily on performance and status, will be key to the ability to transform logistics and to achieve the necessary results. It will also enable better forecasting and planning and the reduction of risk,



hence better decisions. However, its achievement will require the streamlining of logistics processes as well as the defense-wide use of common applications.

Early Signs of Progress

There are already encouraging signs of progress in a number of areas:

Forming single-depth hubs

Following the announcement by British Minister of State for Armed Forces Adam Ingram on Nov. 25, 2004, work is under way in a number of areas to form single-depth hubs for all major fast-jet, heavy-lift, ISTAR (Intelligence, Surveillance, Target Acquisition, and Reconnaissance), and rotary-wing platforms. All on-aircraft depth activity for the Tornado GR4, for example, will be located at RAF Marham. New arrangements have been established for a number of off-aircraft items as well, such as the Tornado Nose Radar, which has shifted from a push system to demand pull, providing line replaceable units (LRUs) for on-aircraft scheduled maintenance and squadron-level rectification activity, successfully delivering substantially increased availability with 55 percent less inventory.

Streamlining the repair loop

By streamlining the end-to-end repair loop, simultaneously addressing customer demand, the transport loop, design authority, and spare provisioning, the number of vehicles in the base overhaul repair loop for the Warrior armored fighting vehicle has been reduced from 75 to 35, freeing up a full battalion's complement of vehicles.

PEPs: changing the way the Army deploys on operations

In the past, units preparing for deployment would assemble the required equipment and supplies from what they held in barracks, quickly estimating and ordering whatever else was required. Unfortunately, that approach all too often meant provisioning demands swamped the supply chain just after deployment, when units realized additional items were needed. The idea behind priming equipment packs (PEPs) is to systematically determine the full set of materiel and supplies to sustain a certain unit in a certain environment until re-supply through the support chain is possible, and to deliver this to them in one preassembled pack prior to deployment. Unit trials of the concept in June 2004, delivered real improvements in effectiveness, in particular reducing the burden on the quartermaster and his or her team in the busy time before deployment.

In-theater supply chain: 24-hour delivery

Perhaps most noteworthy of all, efforts to streamline the in-theater supply chain are paying off, with in-theater requests now being satisfied within 24 hours in Iraq. There are plans to roll these changes out to other operational theaters, starting with Afghanistan.

Changing Operations, Changing Requirements, Changing Solutions

The nature of operations has changed, and we face new challenges. Expeditionary operations are now the principal role of the U.K. armed forces, and associated logistics support must be joint at-force-level, rapidly deployable and recoverable, robust, agile, flexible, and with the minimum logistics footprint. The "effects-based" philosophy of the U.K. joint vision requires that the focus of effort throughout the end-to-end chain of logistics support be directed at delivering the required effects to the enemy's will to fight. With rapidly changing scenarios, the critical enabler is the link between effect at the front end of the chain and action throughout the chain. The whole must be optimized to meet end user needs—that is, the operational need. By applying new tools and techniques to the way the U.K. armed forces support operations, logistics transformation is successfully addressing the lessons learned in Iraq, delivering more effective support in a more cost-effective manner.

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